Notice of Allowability	Application No.	Applicant(s)	
	10/815,895	VASUDEVAN ET AL.	
	Examiner	Art Unit	
	MARSHALL MCLEOD	2457	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *06/08/2009*.

2. ☒ The allowed claim(s) is/are *1,3,7,8,10,13,14,17,18,20,21,24 and 25*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date See Continuation Sheet
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Ramy M Osman/
Primary Examiner, Art Unit 2457

Continuation of Attachment(s) 3. Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date: 09/22/2009, 05/27/2009, 03/18/2009, 03/18/2009, 01/14/2009, 10/23/09,.

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Edmund P. Pfleger on 21 October 2009.

1. (Currently Amended) A method for accelerating TCP (transport control protocol) processing by partitioning processing tasks between system elements in a way that scales with the elements, said method comprising:

receiving an indication on a network component that one or more packets have been received from a network;

splitting each of the one or more packets into a header and a payload and posting each header to a first buffer on a host and each payload to a second buffer on the host, using the network component;

notifying a TCP[-A] (transport control protocol ~~–accelerated~~) driver, by the network component, that the one or more packets have arrived;

performing, using the TCP[-A] driver, TCP stack processing by parsing the header in at least one of the one or more packets to determine the protocol context associated with a current

connection, and performing, using the TCP[-A] driver, TCP protocol compliance for the at least one of the one or more packets; and

performing one or more operations, using the TCP[-A] driver, that result in a data movement module retrieving one or more payloads of the at least one of the one or more packets from the second buffer and placing the one or more corresponding payloads into a read buffer wherein the data movement module comprises a DMA (direct memory access) engine; and

performing, using the TCP driver, one or more operations that result in a data movement module placing one or more corresponding payloads of the at least one of the one or more packets into a read buffer comprises sending a request to a data movement module driver to write the one or more corresponding payloads to the read buffer; and

receiving a request on an operating system to transmit data over the network; the operating system notifying the TCP driver that there is data to be transmitted;

the TCP driver performing one or more operations that result in the data being transmitted to the network component;

in response to receiving the data, the network component creating one or more packets for transmission by packetizing the data; and

the network component transmitting the one or more packets over the network.

4. (Cancelled).

9. (Cancelled).

10. (Currently Amended) An apparatus for accelerating TCP (transport control protocol)

processing by partitioning processing tasks between system elements in a way that scales with the elements, said method comprising:

a network component configured to:

receive an indication that one or more packets have been received from a network;

split each of the one or more packets into a header and a payload and post each header to a first buffer on a host and each .payload to a second buffer on the host; and

notify a TCP[-A] (transport control protocol ~~–accelerated~~) driver that the one or more packets have arrived; and the TCP[-A] driver configured to:

perform packet processing by parsing the header in at least one of the one or more packets to determine the protocol context associated with a current connection, and perform TCP protocol compliance for the at least one of the one or more packets; and

perform one or more operations that result in a data movement module retrieving one or more payloads of the at least one of the one or more packets from the second buffer and placing the one or more corresponding payloads into a read buffer wherein the data movement module comprises a DMA (direct memory access) engine; and

receiving a request on an operating system to transmit data over the network; and

notify the TCP driver that data is ready to be transmitted; wherein:

the TCP driver is capable of performing one or more operations that result in the data being transmitted to the network component; and

the network component is capable of:

creating one or more packets for transmission by packetizing the data in response to receiving the data; and

transmitting the one or more packets over the network.

11. (Cancelled).

13. (Currently Amended) The apparatus of claim 10, wherein the TCP[-A] driver performs packet processing by processing each of the headers, and the TCP[-A] driver is additionally capable of fetching a next header of the one or more headers prior to completing the processing of the current header.

14. (Currently Amended) A system for accelerating TCP (transport control protocol) processing by partitioning processing tasks between elements, said system comprising:

a chipset having a DMA (direct memory access) engine, the chipset communicatively coupled to a TCP[-A] (Transport Control Protocol ~~-Accelerated~~) driver of a processor and to a network component;

the network component configured to:

receive an indication that one or more packets have been received from a network;

split each of the one or more packets into a header and a payload and post each header to a first buffer on a host and each payload to a second buffer on the host; and

notify the TCP[-A] (transport control protocol ~~-accelerated~~) driver that the one or more packets have arrived; and the TCP[-A] driver of the processor configured to:

perform packet processing by parsing the header in at least one of the one or more packets to determine the protocol context associated with a current connection, and perform TCP protocol compliance for the at least one of the one or more packets; and

perform one or more operations that result in a data movement module retrieving one or more payloads of the at least one of the one or more packets from the second buffer and placing the one or more corresponding payloads into a read buffer wherein the data movement module comprises a DMA (direct memory access) engine; and

receiving a request on an operating system to transmit data over the network; and

notify the TCP driver that data is ready to be transmitted; wherein:

the TCP driver is capable of performing one or more operations that result in the data being transmitted to the network component; and

the network component is capable of:

creating one or more packets for transmission by packetizing the data in response to receiving the data; and

transmitting the one or more packets over the network.

15. (Cancelled).

18. (Currently Amended) A machine-readable medium having stored thereon instructions, the instructions when executed by a machine, result in the following:

receiving an indication on a network component that one or more packets have been received from a network;

the network component splitting each of the one or more packets into a header and a payload and posting each header to a first buffer on a host and each payload to a second buffer on the host;

the network component notifying a TCP[-A] (transport control protocol ~~– accelerated~~) driver, by the network component, that the one or more packets have arrived;

the TCP[-A] driver performing packet processing by parsing the header in at least one of the one or more packets to determine the protocol context associated with a current connection, and performing, using the TCP[-A] driver, TCP protocol compliance for the at least one of the one or more packets to determine the protocol context associated with a current connection, and performing TCP protocol compliance for the at least one of the one or more packets; and

the TCP[-A] driver performing one or more operations that result in a data movement module retrieving one or more payloads of the at least one of the one or more packets from the second buffer and placing the one or more corresponding payloads into a read buffer, wherein the data movement module comprises a DMA (direct memory access) engine; and

performing, using the TCP driver, one or more operations that result in a data movement module placing one or more corresponding payloads of the at least one of the one or more packets into a read buffer comprises sending a request to a data movement module driver to write the one or more corresponding payloads to the read buffer; and

receiving a request on an operating system to transmit data over the network; the operating system notifying the TCP driver that there is data to be transmitted;

the TCP driver performing one or more operations that result in the data being transmitted to the network component;

in response to receiving the data, the network component creating one or more packets for transmission by packetizing the data; and

the network component transmitting the one or more packets over the network.

22. (Cancelled).

26. (Cancelled).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARSHALL MCLEOD whose telephone number is (571)270-3808. The examiner can normally be reached on Monday - Thursday 6:30 a.m-4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ramy M Osman/
Primary Examiner, Art Unit 2457

/Marshall McLeod/
Examiner, Art Unit 2457
10/19/2009